WHAT IS CLAIMED IS:

1. A fan motor comprising:

a single-phase stepping motor including a stator excited by applying an electric current to a coil to function as a single-phase magnetic pole, and a rotor which has a permanent magnet magnetized to a single phase and rotates as the magnetic pole of the stator changes;

an impeller which is rotated by a rotating shaft of the rotor; and

a drive circuit for controlling an application of a current to the coil,

wherein the drive circuit applies pulse voltage to the coil and the coil constant is set so that a mean value of the current applied to the coil is 10 mA or smaller.

2. The fan motor according to claim 1, wherein the drive circuit includes CMOS transistors.

3. The fan motor according to claim 1, wherein a timepiece IC is used as the drive circuit.

4. A fan motor according to claim 1, wherein a pulse frequency which is output from the drive circuit at a time of starting is set lower than the pulse frequency during a steady operation.

5. A fan motor according to claim 1, further comprising a coupling mechanism which couples the impeller to the rotating shaft relatively and rotatably, wherein the coupling mechanism couples the impeller slidably to the rotating shaft of the rotor; causes the rotating shaft to race with respect to the impeller at the time of starting the motor; and causes the impeller to rotate by following the rotation of the rotating shaft by friction during the steady operation.

6. The fan motor according to claim 1, further comprising a coupling mechanism which couples the impeller to the rotating shaft relatively and rotatably, wherein the coupling mechanism couples the impeller slidably to the rotating shaft of the rotor; includes a permanent magnet for attracting the impeller so as to contact the impeller against the rotating shaft of the rotor with a predetermined holding-down force; causes the rotating shaft to race with respect to the impeller at the time of starting the motor; and causes the impeller to rotate by following the rotation of the rotating shaft during the steady operation.